

Illumination device with at least one LED as the light source

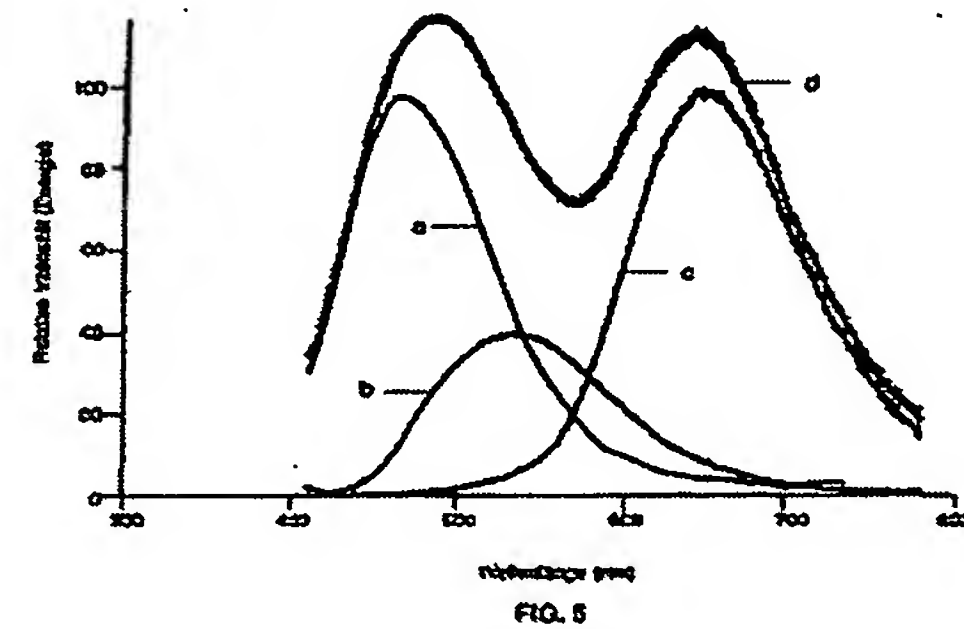
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US6670748 (B2)
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White light emitting diode (LED) converting short wave radiation into longer wave radiation uses doped nitrides, oxynitrides and sialon phosphors. The phosphor comprises cation (M) and a silicon nitride or nitride derivative. The wavelength of peak emission is 430-670 nm. The cation is partially replaced by dopant (D) i.e. europium (Eu²⁺) or cerium (Ce³⁺). The cation is a bivalent metal e.g. barium (Ba), calcium (Ca), strontium (Sr) and/or a trivalent metal e.g. lutetium (Lu), lanthanum (La), gadolinium (Gd) or yttrium (Y). The phosphor originates from one of the following classes: nitride structure MSi₃N₅, M₂Si₄N₇, M₄Si₆N₁₁, M₉Si₁₁N₂₃; Oxynitride structure M₁₆Si₁₅O₆N₃₂; sialons MSiAl₂O₃N₂, M₁₃Si₁₈Al₁₂O₁₈N₃₆, MSi₅Al₂O₉N₉ and M₃Si₅Al₁₀N₁₀. An Independent claim is included for pigments exhibiting daylight fluorescence, based on the foregoing substances.



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